

What is claimed is:

1. A light guide comprising a bundle of a large number of optical fibers, and emitting illumination light guided by the optical fibers from a light emission end face, wherein

an amount of light emitted from a central region in the light emission end face is relatively small in comparison with an amount of light emitted from a peripheral region in the light emission end face.

2. A light guide according to claim 1, wherein a light shielding member for partially or completely shielding light emitted from the central region in the light emission end face is provided near the light emission end face.

3. A light guide according to claim 1, wherein the optical fibers are aligned, more loosely in the central region in the light emission end face, and more densely in the peripheral region in the light emission end face.

4. A light guide according to claim 1, wherein an illumination optical system composed of a plano-concave lens is provided near the light emission end face.

5. A light guide according to claim 2, wherein an illumination optical system composed of a plano-concave lens is provided near the light emission end face.

6. A light guide according to claim 3, wherein an illumination optical system composed of a plano-concave lens is provided near the light emission end face.

7. A light guide according to claim 1, further comprising an illumination optical system near the light emission end face, the illumination optical system including an optical element and at least one convex lens,

the optical element having a side face with a function of light reflection and having a light emission face with a function of a convex lens.

8. A light guide according to claim 2, further comprising an illumination optical system near the light emission end face, the illumination optical system including an optical element and at least one convex lens,

the optical element having a side face with a function of light reflection and having a light emission face with a function of a convex lens.

9. A light guide according to claim 3, further comprising an illumination optical system near the light emission end face, the illumination optical system including an optical element and at least one convex lens,

the optical element having a side face with a function of light reflection and having a light emission face with a function of a convex lens.

10. An endoscope comprising illumination means for illuminating an object under observation and comprising observation means for observing the object illuminated by the illumination means, the illumination means including:

a light guide having a bundle of a large number of optical fibers, and

an illumination optical system provided at a light emission end face of the light guide, wherein

an amount of light emitted from a central region in the light emission end face of the light guide is relatively small in comparison with an amount of light emitted from a peripheral region in the light emission end face.

11. An endoscope according to claim 10, wherein a light shielding member for partially or completely shielding light emitted from the central region in the light emission end face is

provided near the light emission end face of the light guide.

12. An endoscope according to claim 10, wherein the optical fibers of the light guide are aligned, more loosely in the central region in the light emission end face, and more densely in the peripheral region in the light emission end face.

13. An endoscope according to claim 10, wherein the illumination optical system is composed of a plano-convex lens.

14. An endoscope according to claim 11, wherein the illumination optical system is composed of a plano-convex lens.

15. An endoscope according to claim 12, wherein the illumination optical system is composed of a plano-convex lens.

16. An endoscope according to claim 10, wherein the illumination optical system comprising an optical element and at least one convex lens provided in order from the light emission end face,

the optical element having a side face with a function of light reflection and having a light emission face with a function of a convex lens.

17. An endoscope according to claim 11, wherein the illumination optical system comprising an optical element and at least one convex lens provided in order from the light emission end face,

the optical element having a side face with a function of light reflection and having a light emission face with a function of a convex lens.

18. An endoscope according to claim 12, wherein the illumination optical system comprising an optical element and at least one convex lens provided in order from the light emission end face,

the optical element having a side face with a function of light reflection and having a light emission face with a function of a convex lens.